



## SEQUENCE LISTING

<110> Mark Marchionni  
Michael Jarpe  
Ted Ebendal

<120> METHODS FOR TREATING NEUROLOGICAL  
INJURIES AND DISORDERS

<130> 47506 (71095)

<140> 09/756,481

<141> 2001-01-08

<150> PCT/US99/15106

<151> 1999-07-02

<150> 60/091,791

<151> 1998-07-06

<160> 4

<170> FastSEQ for Windows Version 3.0

<210> 1

<211> 1387

<212> DNA

<213> Mouse

<220>

<221> CDS

<222> (218)...(1288)

<400> 1

cccttctcca gggactctgg ctgccagcag ctccgccttt cagatcaatt ctcgaccacc	60
caccttgga ctgccgcca gtcctgccct ctggatcagt ggggtccaga cagccccct	120
ccaggacctc aaagcacccc cgacctagg tcaccagccc actggcccca gacgcagtgg	180
gctccgctga ctctcttgga cacctcctgg gaggaaa atg ctc cct gtc tgc cat	235
Met Leu Pro Val Cys His	
1 5	
cgt ttt tgc gac cac ctc ctc ctc ctg ctc ttg ctg ccc tcg acg acc	283
Arg Phe Cys Asp His Leu Leu Leu Leu Leu Leu Pro Ser Thr Thr	
10 15 20	
ctg gcc ccc gcg cca gca tcc atg ggc ccc gct gcc gcc ctg ctc cag	331
Leu Ala Pro Ala Pro Ala Ser Met Gly Pro Ala Ala Ala Leu Leu Gln	
25 30 35	
gtt ctt ggg ctt ccc gaa gcg ccc cgg agc gtc ccc aca cac cga cct	379
Val Leu Gly Leu Pro Glu Ala Pro Arg Ser Val Pro Thr His Arg Pro	

40	45	50	
gtg cct cct gtc atg tgg cgc cta ttc cgt cgc cgt gac ccc cag gag			427
Val Pro Pro Val Met Trp Arg Leu Phe Arg Arg Arg Asp Pro Gln Glu			
55	60	65	70
gcc aga gtg gga cgc cct ctg cgg cca tgc cac gtg gag gaa cta ggg			475
Ala Arg Val Gly Arg Pro Leu Arg Pro Cys His Val Glu Glu Leu Gly			
	75	80	85
gtc gcc gga aac att gtg cgc cac atc ccc gac agc ggt ctg tcc tcc			523
Val Ala Gly Asn Ile Val Arg His Ile Pro Asp Ser Gly Leu Ser Ser			
	90	95	100
agg ccc gca caa ccc gcc agg acc tcg ggg ctg tgc ccc gag tgg aca			571
Arg Pro Ala Gln Pro Ala Arg Thr Ser Gly Leu Cys Pro Glu Trp Thr			
	105	110	115
gtc gtc ttt gac ctg tcg aat gtg gag ccc aca gag cgc cca aca cgc			619
Val Val Phe Asp Leu Ser Asn Val Glu Pro Thr Glu Arg Pro Thr Arg			
	120	125	130
gcg cgc tta gag ttg cgg ctg gag gct gag tgt gaa gat aca gga ggg			667
Ala Arg Leu Glu Leu Arg Leu Glu Ala Glu Cys Glu Asp Thr Gly Gly			
135	140	145	150
tgg gag cta agc gtg gca ctg tgg gcc gac gca gag cat cca ggg cct			715
Trp Glu Leu Ser Val Ala Leu Trp Ala Asp Ala Glu His Pro Gly Pro			
	155	160	165
gag ctg ctg cgc gtg ccg gcg cca cca ggg gtg ctc ctg cgc gca gac			763
Glu Leu Leu Arg Val Pro Ala Pro Pro Gly Val Leu Leu Arg Ala Asp			
	170	175	180
cta ctg ggg act gca gta gcc gcc aac gca tca gtg ccc tgt act gtg			811
Leu Leu Gly Thr Ala Val Ala Ala Asn Ala Ser Val Pro Cys Thr Val			
	185	190	195
cgc ctg gcg ctg tca ctg cac cct ggg gcc act gca gcc tgt ggg cgc			859
Arg Leu Ala Leu Ser Leu His Pro Gly Ala Thr Ala Ala Cys Gly Arg			
	200	205	210
ctg gct gag gcc tcc ctg ctg ctg gtg acg ctg gac cca cgc ctg tgt			907
Leu Ala Glu Ala Ser Leu Leu Leu Val Thr Leu Asp Pro Arg Leu Cys			
215	220	225	230
ccc ttg ccg cga ttg cgg cgc cac acg gag ccc agg gta gaa gtt ggt			955
Pro Leu Pro Arg Leu Arg Arg His Thr Glu Pro Arg Val Glu Val Gly			
	235	240	245
cca gtg ggc act tgt cgt acc cga cgg ttg cat gtg agc ttc cgt gag			1003
Pro Val Gly Thr Cys Arg Thr Arg Arg Leu His Val Ser Phe Arg Glu			

250	255	260	
gtg ggc tgg cac cgt tgg gtg atc gcg ccg cgt ggc ttc cta gcc aac			1051
Val Gly Trp His Arg Trp Val Ile Ala Pro Arg Gly Phe Leu Ala Asn			
265	270	275	
ttc tgc cag ggc acg tgc gca cta ccc gaa acg ctg agg gga ccc ggc			1099
Phe Cys Gln Gly Thr Cys Ala Leu Pro Glu Thr Leu Arg Gly Pro Gly			
280	285	290	
ggg ccg cct gca ctc aac cac gct gtg ctg cgc gcg ctc atg cac gca			1147
Gly Pro Pro Ala Leu Asn His Ala Val Leu Arg Ala Leu Met His Ala			
295	300	305	310
gct gct ccc acc ccg ggt gca ggc tgc ccc tgc tgc gtg cca gag cgt			1195
Ala Ala Pro Thr Pro Gly Ala Gly Ser Pro Cys Cys Val Pro Glu Arg			
315	320	325	
cta tca ccc atc tcc gtg ctc ttc ttc gac aat agt gac aac gtg gtc			1243
Leu Ser Pro Ile Ser Val Leu Phe Phe Asp Asn Ser Asp Asn Val Val			
330	335	340	
ctg cga cac tac gaa gac atg gtg gtg gat gag tgt ggc tgc cgt			1288
Leu Arg His Tyr Glu Asp Met Val Val Asp Glu Cys Gly Cys Arg			
345	350	355	
tgaccacccg ggacaccctt tcagggaccg cccacgcaa aagcaggac tgttttgttca			1348
tgttttattg gtgacaaaaa gcttaaaaca aatttgact			1387

<210> 2  
 <211> 357  
 <212> PRT  
 <213> Mouse

<400> 2

Met	Leu	Pro	Val	Cys	His	Arg	Phe	Cys	Asp	His	Leu	Leu	Leu	Leu	Leu
1				5				10					15		
Leu	Leu	Pro	Ser	Thr	Thr	Leu	Ala	Pro	Ala	Pro	Ala	Ser	Met	Gly	Pro
			20				25					30			
Ala	Ala	Ala	Leu	Leu	Gln	Val	Leu	Gly	Leu	Pro	Glu	Ala	Pro	Arg	Ser
		35				40					45				
Val	Pro	Thr	His	Arg	Pro	Val	Pro	Pro	Val	Met	Trp	Arg	Leu	Phe	Arg
	50				55				60						
Arg	Arg	Asp	Pro	Gln	Glu	Ala	Arg	Val	Gly	Arg	Pro	Leu	Arg	Pro	Cys
65				70					75					80	
His	Val	Glu	Glu	Leu	Gly	Val	Ala	Gly	Asn	Ile	Val	Arg	His	Ile	Pro
			85			90							95		
Asp	Ser	Gly	Leu	Ser	Ser	Arg	Pro	Ala	Gln	Pro	Ala	Arg	Thr	Ser	Gly
		100					105					110			
Leu	Cys	Pro	Glu	Trp	Thr	Val	Val	Phe	Asp	Leu	Ser	Asn	Val	Glu	Pro
	115					120						125			
Thr	Glu	Arg	Pro	Thr	Arg	Ala	Arg	Leu	Glu	Leu	Arg	Leu	Glu	Ala	Glu

130	135	140
Cys Glu Asp Thr Gly Gly Trp Glu Leu Ser Val Ala Leu Trp Ala Asp		
145	150	155
Ala Glu His Pro Gly Pro Glu Leu Leu Arg Val Pro Ala Pro Pro Gly		160
	165	170
Val Leu Leu Arg Ala Asp Leu Leu Gly Thr Ala Val Ala Ala Asn Ala		175
	180	185
Ser Val Pro Cys Thr Val Arg Leu Ala Leu Ser Leu His Pro Gly Ala		190
	195	200
Thr Ala Ala Cys Gly Arg Leu Ala Glu Ala Ser Leu Leu Leu Val Thr		205
	210	215
Leu Asp Pro Arg Leu Cys Pro Leu Pro Arg Leu Arg Arg His Thr Glu		220
225	230	235
Pro Arg Val Glu Val Gly Pro Val Gly Thr Cys Arg Thr Arg Arg Leu		240
	245	250
His Val Ser Phe Arg Glu Val Gly Trp His Arg Trp Val Ile Ala Pro		255
	260	265
Arg Gly Phe Leu Ala Asn Phe Cys Gln Gly Thr Cys Ala Leu Pro Glu		270
	275	280
Thr Leu Arg Gly Pro Gly Gly Pro Pro Ala Leu Asn His Ala Val Leu		285
	290	295
Arg Ala Leu Met His Ala Ala Ala Pro Thr Pro Gly Ala Gly Ser Pro		300
305	310	315
Cys Cys Val Pro Glu Arg Leu Ser Pro Ile Ser Val Leu Phe Phe Asp		320
	325	330
Asn Ser Asp Asn Val Val Leu Arg His Tyr Glu Asp Met Val Val Asp		335
	340	345
Glu Cys Gly Cys Arg		350
	355	

<210> 3  
 <211> 27  
 <212> DNA  
 <213> Mouse

<400> 3  
 gcagccacac tcctccacca ccatgtt

27

<210> 4  
 <211> 9  
 <212> PRT  
 <213> Mouse

<400> 4  
 Asn Met Val Val Glu Glu Cys Gly Cys  
 1 5

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<110> Mark Marchionni  
Michael Jarpe  
Ted Ebendal

<120> METHODS FOR TREATING NEUROLOGICAL  
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<140> 09/756,481

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<151> 1999-07-02

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<151> 1998-07-06

<160> 2

<170> FastSEQ for Windows Version 3.0

<210> 1

<211> 1387

<212> DNA

<213> Artificial Sequence

<220>

<221> CDS

<222> (218)...(1288)

<400> 1

cccttctcca	gggactctgg	ctgccagcag	ctccgccttt	cagatcaatt	ctcgaccacc	60
caccttgga	ctgccgcca	gtcctgccct	ctggatcagt	ggggtccaga	cacgccccct	120
ccaggacctc	aaagcacc	cgacctaagg	tcaccagccc	actggcccca	gacgcagtgg	180
gctccgctga	ctctcttga	cacctcctgg	gaggaaa	atg ctc cct gtc tgc cat		235

Met Leu Pro Val Cys His

1

5

cgt ttt tgc	gac cac ctc	ctc ctc ctc	ctg ctc ttg	ctg ccc tcg	acg acc	283
Arg Phe Cys	Asp His Leu	Leu Leu Leu	Leu Leu Leu	Pro Ser Thr	Thr	
	10		15		20	

ctg gcc ccc	gcg cca gca	tcc atg ggc	ccc gct gcc	gcc ctg ctc	cag	331
Leu Ala Pro	Ala Pro Ala	Ser Met Gly	Pro Ala Ala	Ala Leu Leu	Gln	
	25		30		35	

gtt ctt ggg	ctt ccc gaa	gcg ccc cgg	agc gtc ccc	aca cac cga	cct	379
Val Leu Gly	Leu Pro Glu	Ala Pro Arg	Ser Val Pro	Thr His Arg	Pro	
	40		45		50	

gtg cct cct gtc atg tgg cgc cta ttc cgt cgc cgt gac ccc cag gag	427
Val Pro Pro Val Met Trp Arg Leu Phe Arg Arg Arg Asp Pro Gln Glu	
55 60 65 70	
gcc aga gtg gga cgc cct ctg cgg cca tgc cac gtg gag gaa cta ggg	475
Ala Arg Val Gly Arg Pro Leu Arg Pro Cys His Val Glu Glu Leu Gly	
75 80 85	
gtc gcc gga aac att gtg cgc cac atc ccc gac agc ggt ctg tcc tcc	523
Val Ala Gly Asn Ile Val Arg His Ile Pro Asp Ser Gly Leu Ser Ser	
90 95 100	
agg ccc gca caa ccc gcc agg acc tcg ggg ctg tgc ccc gag tgg aca	571
Arg Pro Ala Gln Pro Ala Arg Thr Ser Gly Leu Cys Pro Glu Trp Thr	
105 110 115	
gtc gtc ttt gac ctg tcg aat gtg gag ccc aca gag cgc cca aca cgc	619
Val Val Phe Asp Leu Ser Asn Val Glu Pro Thr Glu Arg Pro Thr Arg	
120 125 130	
gcg cgc tta gag ttg cgg ctg gag gct gag tgt gaa gat aca gga ggg	667
Ala Arg Leu Glu Leu Arg Leu Glu Ala Glu Cys Glu Asp Thr Gly Gly	
135 140 145 150	
tgg gag cta agc gtg gca ctg tgg gcc gac gca gag cat cca ggg cct	715
Trp Glu Leu Ser Val Ala Leu Trp Ala Asp Ala Glu His Pro Gly Pro	
155 160 165	
gag ctg ctg cgc gtg ccg gcg cca cca ggg gtg ctc ctg cgc gca gac	763
Glu Leu Leu Arg Val Pro Ala Pro Pro Gly Val Leu Leu Arg Ala Asp	
170 175 180	
cta ctg ggg act gca gta gcc gcc aac gca tca gtg ccc tgt act gtg	811
Leu Leu Gly Thr Ala Val Ala Ala Asn Ala Ser Val Pro Cys Thr Val	
185 190 195	
cgc ctg gcg ctg tca ctg cac cct ggg gcc act gca gcc tgt ggg cgc	859
Arg Leu Ala Leu Ser Leu His Pro Gly Ala Thr Ala Ala Cys Gly Arg	
200 205 210	
ctg gct gag gcc tcc ctg ctg ctg gtg acg ctg gac cca cgc ctg tgt	907
Leu Ala Glu Ala Ser Leu Leu Leu Val Thr Leu Asp Pro Arg Leu Cys	
215 220 225 230	
ccc ttg ccg cga ttg cgg cgc cac acg gag ccc agg gta gaa gtt ggt	955
Pro Leu Pro Arg Leu Arg Arg His Thr Glu Pro Arg Val Glu Val Gly	
235 240 245	
cca gtg ggc act tgt cgt acc cga cgg ttg cat gtg agc ttc cgt gag	1003
Pro Val Gly Thr Cys Arg Thr Arg Arg Leu His Val Ser Phe Arg Glu	
250 255 260	

gtg ggc tgg cac cgt tgg gtg atc gcg ccg cgt ggc ttc cta gcc aac	1051
Val Gly Trp His Arg Trp Val Ile Ala Pro Arg Gly Phe Leu Ala Asn	
265 270 275	
ttc tgc cag ggc acg tgc gca cta ccc gaa acg ctg agg gga ccc ggc	1099
Phe Cys Gln Gly Thr Cys Ala Leu Pro Glu Thr Leu Arg Gly Pro Gly	
280 285 290	
ggg ccg cct gca ctc aac cac gct gtg ctg cgc gcg ctc atg cac gca	1147
Gly Pro Pro Ala Leu Asn His Ala Val Leu Arg Ala Leu Met His Ala	
295 300 305 310	
gct gct ccc acc ccg ggt gca ggc tcg ccc tgc tgc gtg cca gag cgt	1195
Ala Ala Pro Thr Pro Gly Ala Gly Ser Pro Cys Cys Val Pro Glu Arg	
315 320 325	
cta tca ccc atc tcc gtg ctc ttc ttc gac aat agt gac aac gtg gtc	1243
Leu Ser Pro Ile Ser Val Leu Phe Phe Asp Asn Ser Asp Asn Val Val	
330 335 340	
ctg cga cac tac gaa gac atg gtg gtg gat gag tgt ggc tgc cgt	1288
Leu Arg His Tyr Glu Asp Met Val Val Asp Glu Cys Gly Cys Arg	
345 350 355	
tgaccacccg ggacaccctt tcagggaccg ccccacgcaa aagcagggac tgtttgttca	1348
tgtttttattg gtgacaaaaa gcttaaaaca aatttgact	1387

<210> 2  
 <211> 357  
 <212> PRT  
 <213> Artificial Sequence

<400> 2

Met	Leu	Pro	Val	Cys	His	Arg	Phe	Cys	Asp	His	Leu	Leu	Leu	Leu	Leu
1				5				10					15		
Leu	Leu	Pro	Ser	Thr	Thr	Leu	Ala	Pro	Ala	Pro	Ala	Ser	Met	Gly	Pro
			20					25					30		
Ala	Ala	Ala	Leu	Leu	Gln	Val	Leu	Gly	Leu	Pro	Glu	Ala	Pro	Arg	Ser
		35				40						45			
Val	Pro	Thr	His	Arg	Pro	Val	Pro	Pro	Val	Met	Trp	Arg	Leu	Phe	Arg
	50				55					60					
Arg	Arg	Asp	Pro	Gln	Glu	Ala	Arg	Val	Gly	Arg	Pro	Leu	Arg	Pro	Cys
65				70					75					80	
His	Val	Glu	Glu	Leu	Gly	Val	Ala	Gly	Asn	Ile	Val	Arg	His	Ile	Pro
			85					90					95		
Asp	Ser	Gly	Leu	Ser	Ser	Arg	Pro	Ala	Gln	Pro	Ala	Arg	Thr	Ser	Gly
		100					105						110		
Leu	Cys	Pro	Glu	Trp	Thr	Val	Val	Phe	Asp	Leu	Ser	Asn	Val	Glu	Pro
	115					120						125			
Thr	Glu	Arg	Pro	Thr	Arg	Ala	Arg	Leu	Glu	Leu	Arg	Leu	Glu	Ala	Glu
130						135					140				

Cys	Glu	Asp	Thr	Gly	Gly	Trp	Glu	Leu	Ser	Val	Ala	Leu	Trp	Ala	Asp	145	150	155	160
Ala	Glu	His	Pro	Gly	Pro	Glu	Leu	Leu	Arg	Val	Pro	Ala	Pro	Pro	Gly	165	170		175
Val	Leu	Leu	Arg	Ala	Asp	Leu	Leu	Gly	Thr	Ala	Val	Ala	Ala	Asn	Ala	180	185		190
Ser	Val	Pro	Cys	Thr	Val	Arg	Leu	Ala	Leu	Ser	Leu	His	Pro	Gly	Ala	195	200		205
Thr	Ala	Ala	Cys	Gly	Arg	Leu	Ala	Glu	Ala	Ser	Leu	Leu	Leu	Val	Thr	210	215		220
Leu	Asp	Pro	Arg	Leu	Cys	Pro	Leu	Pro	Arg	Leu	Arg	Arg	His	Thr	Glu	225	230		235
Pro	Arg	Val	Glu	Val	Gly	Pro	Val	Gly	Thr	Cys	Arg	Thr	Arg	Arg	Leu	245	250		255
His	Val	Ser	Phe	Arg	Glu	Val	Gly	Trp	His	Arg	Trp	Val	Ile	Ala	Pro	260	265		270
Arg	Gly	Phe	Leu	Ala	Asn	Phe	Cys	Gln	Gly	Thr	Cys	Ala	Leu	Pro	Glu	275	280		285
Thr	Leu	Arg	Gly	Pro	Gly	Gly	Pro	Pro	Ala	Leu	Asn	His	Ala	Val	Leu	290	295		300
Arg	Ala	Leu	Met	His	Ala	Ala	Ala	Pro	Thr	Pro	Gly	Ala	Gly	Ser	Pro	305	310		315
Cys	Cys	Val	Pro	Glu	Arg	Leu	Ser	Pro	Ile	Ser	Val	Leu	Phe	Phe	Asp	325	330		335
Asn	Ser	Asp	Asn	Val	Val	Leu	Arg	His	Tyr	Glu	Asp	Met	Val	Val	Asp	340	345		350
Glu	Cys	Gly	Cys	Arg												355			